

1/9

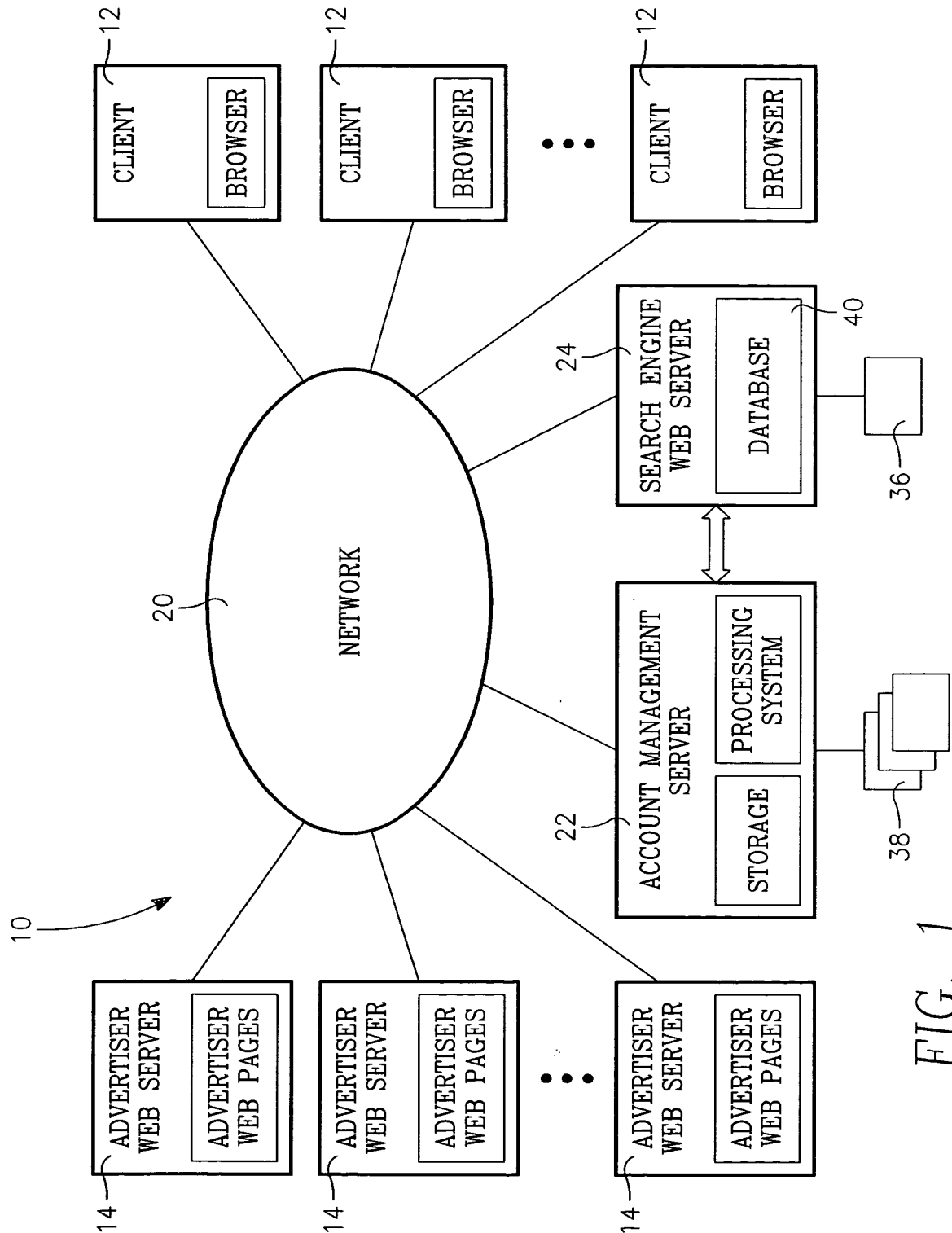


FIG. 1

2/9

200

TERMS	FIRST COFFEE MERCHANT	COMPUTER PROGRAMMER	SECOND COFFEE MERCHANT
JAVA	x	x	x
COFEE	x		
COFFEE	x		x
COFFEE GIFT	x		x
VINEYARD	x		
PROGRAMMING JAVA		x	
PROGRAMMING		x	
BEVERAGE			x
TEA			x
ANSI C		x	
BUILD WEB SITE		x	

FIG. 2

$$A = \begin{pmatrix} 1 & 1 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 1 & 1 & 0 & 0 & 1 & 1 \\ 1 & 0 & 1 & 1 & 0 & 0 & 0 & 1 & 1 & 0 & 0 \end{pmatrix}$$

FIG. 3

$$C' = \begin{matrix} & \begin{matrix} \text{FIRST} \\ \text{COFFEE} \\ \text{MERCHANT} \end{matrix} & \begin{matrix} \text{COMPUTER} \\ \text{PROGRAMMER} \end{matrix} & \begin{matrix} \text{SECOND} \\ \text{COFFEE} \\ \text{MERCHANT} \end{matrix} \\ \begin{matrix} \text{FIRST COFFEE MERCHANT} \\ \text{COMPUTER PROGRAMMER} \\ \text{SECOND COFFEE MERCHANT} \end{matrix} & \begin{pmatrix} 1 & -0.4667 & 0.2667 \\ -0.4667 & 1 & -0.4667 \\ 0.2667 & -0.4667 & 1 \end{pmatrix} \end{matrix}$$

FIG. 4

3/9

$$M = \begin{matrix} & \begin{matrix} \text{FIRST COFFEE} \\ \text{MERCHANT} \end{matrix} & \begin{matrix} \text{COMPUTER} \\ \text{PROGRAMMER} \end{matrix} & \begin{matrix} \text{SECOND COFFEE} \\ \text{MERCHANT} \end{matrix} \\ \begin{matrix} \text{FIRST COFFEE MERCHANT} \\ \text{COMPUTER PROGRAMMER} \\ \text{SECOND COFFEE MERCHANT} \end{matrix} & \begin{pmatrix} 5 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 5 \end{pmatrix} \end{matrix}$$

FIG. 5

$$C = \begin{matrix} & \begin{matrix} \text{FIRST COFFEE} \\ \text{MERCHANT} \end{matrix} & \begin{matrix} \text{COMPUTER} \\ \text{PROGRAMMER} \end{matrix} & \begin{matrix} \text{SECOND COFFEE} \\ \text{MERCHANT} \end{matrix} \\ \begin{matrix} \text{FIRST COFFEE MERCHANT} \\ \text{COMPUTER PROGRAMMER} \\ \text{SECOND COFFEE MERCHANT} \end{matrix} & \begin{pmatrix} 1 & -0.866025 & 0.5 \\ 0.866025 & 1 & -0.866025 \\ 0.866025 & 0.866025 & 1 \end{pmatrix} \end{matrix}$$

FIG. 6

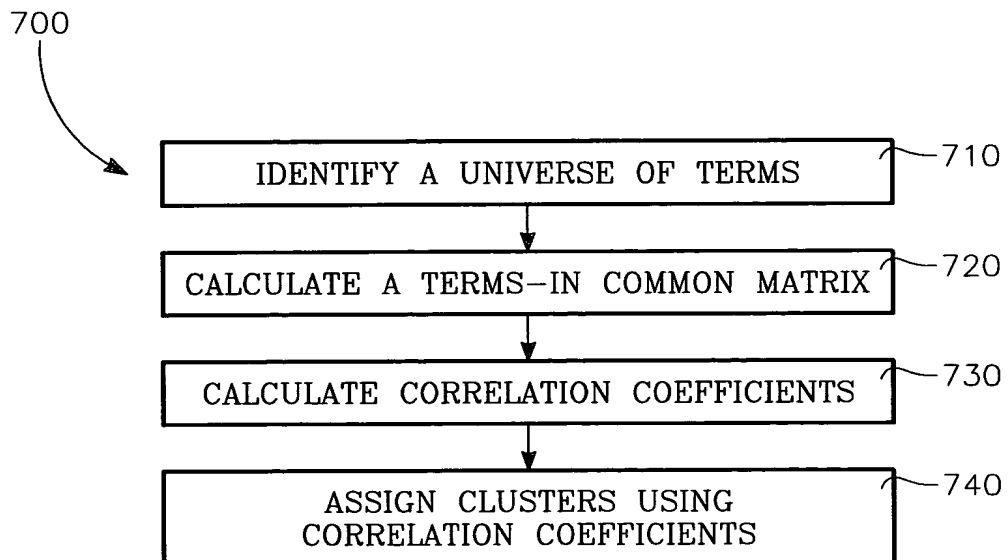


FIG. 7

4/9

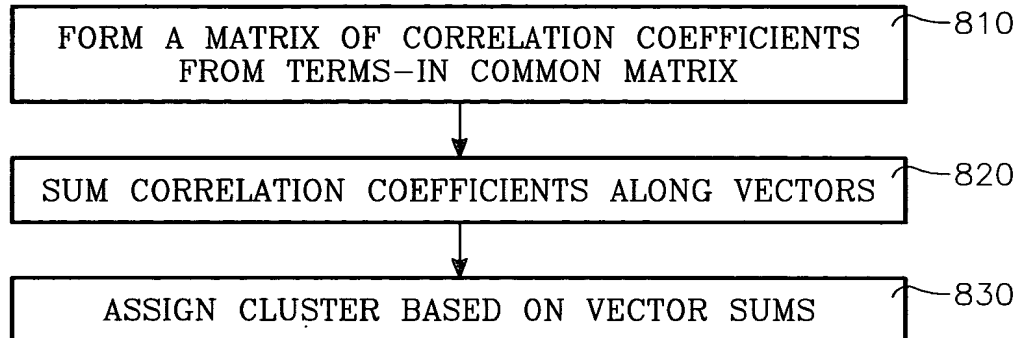


FIG. 8

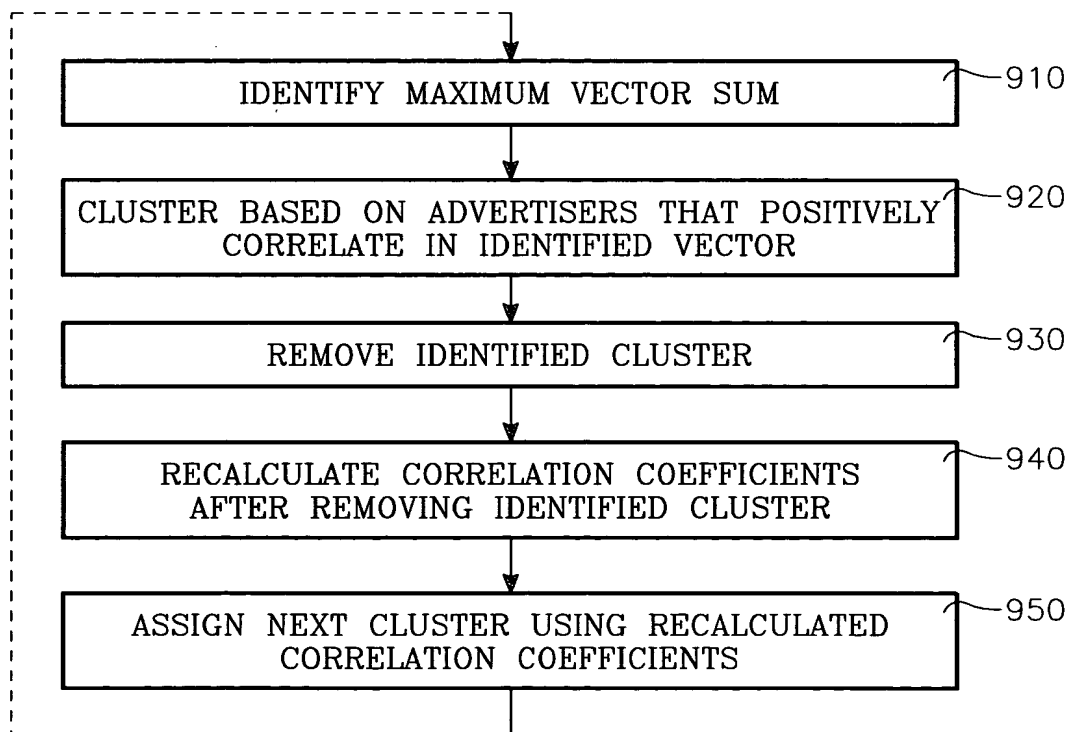


FIG. 9

5/9

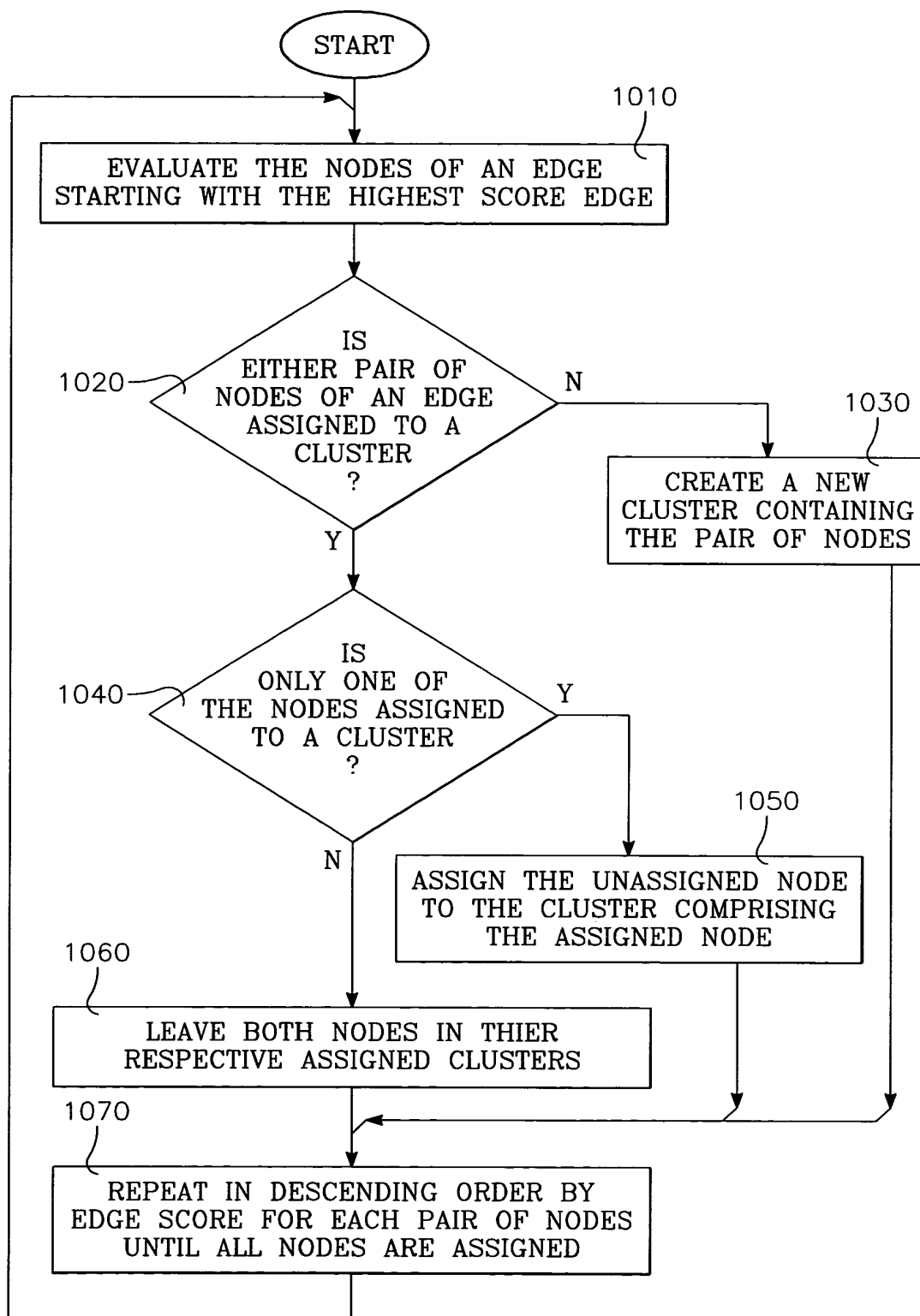


FIG. 10

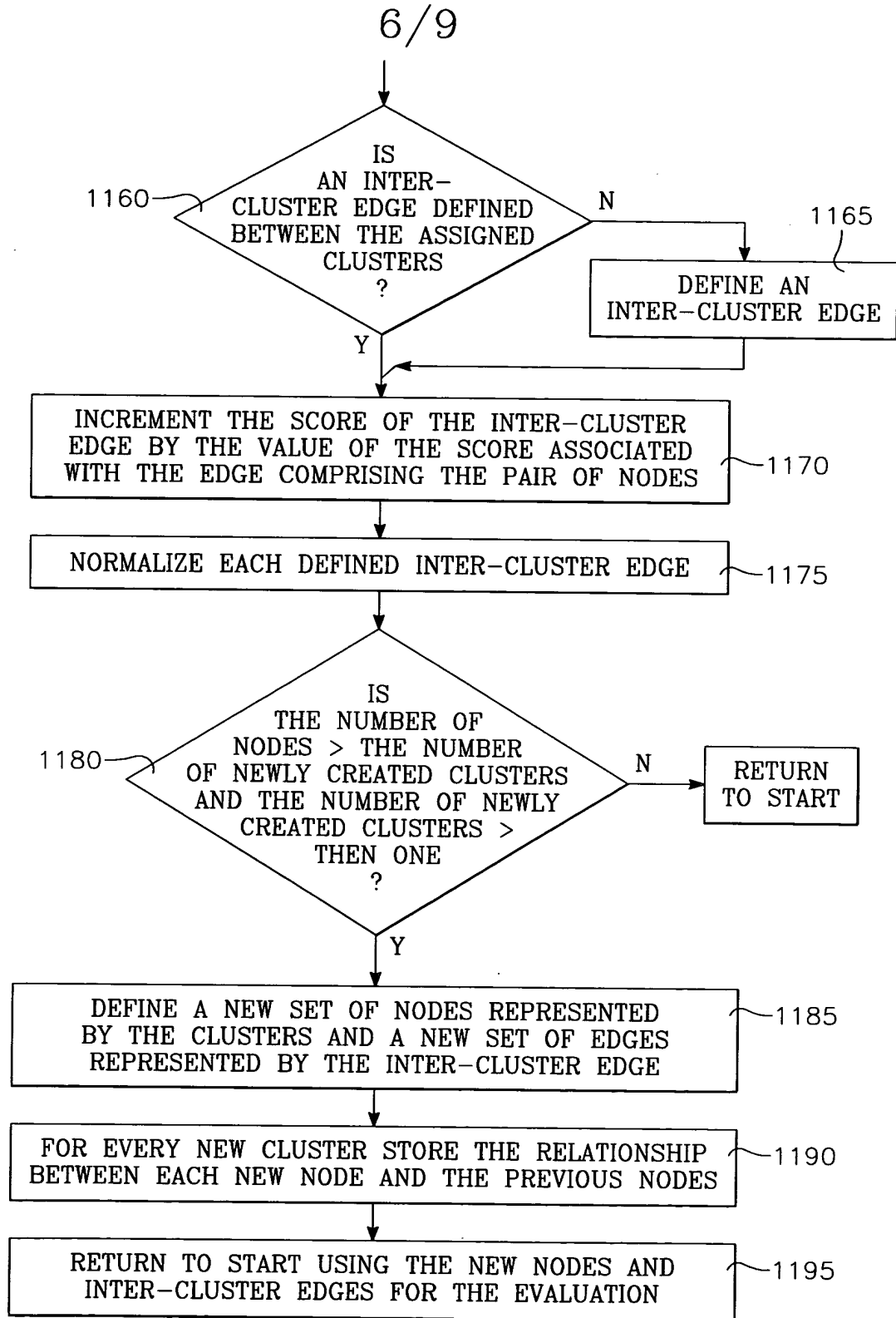


FIG. 11

7/9

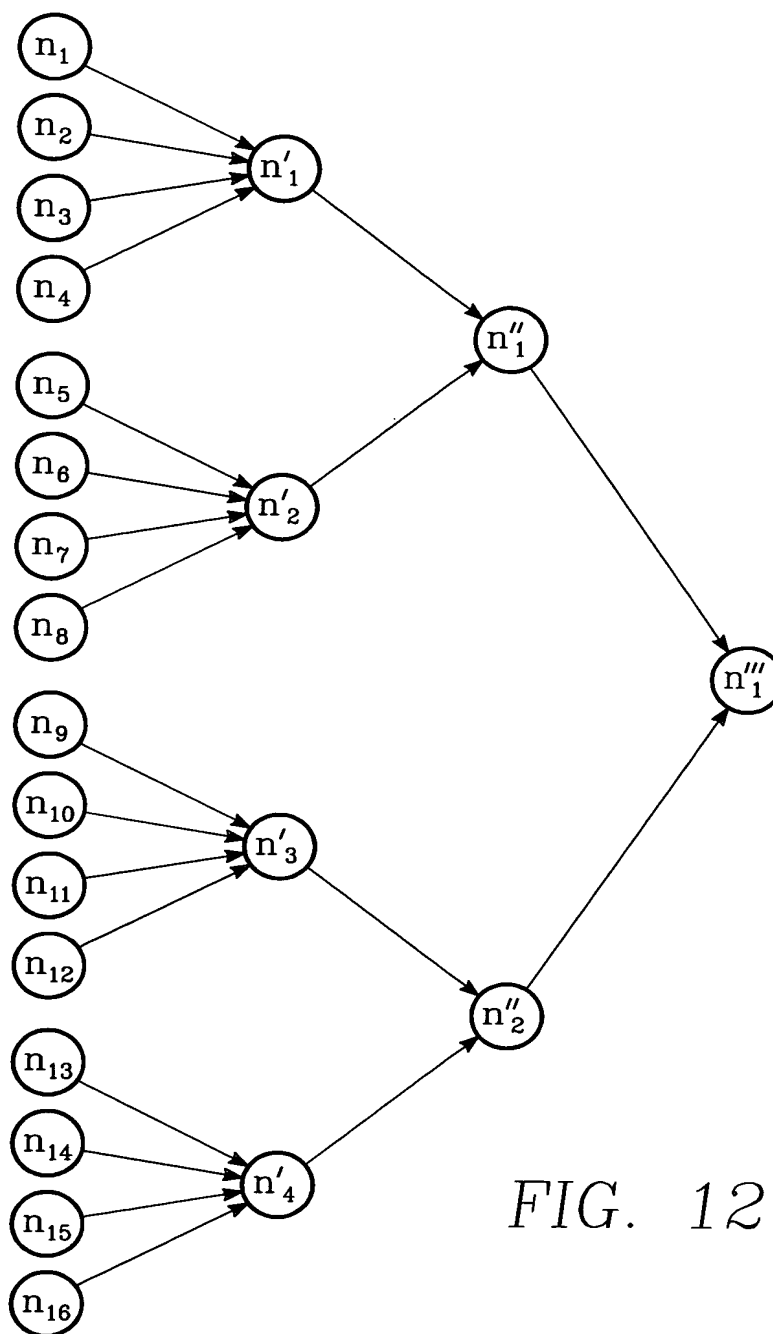


FIG. 12

8/9

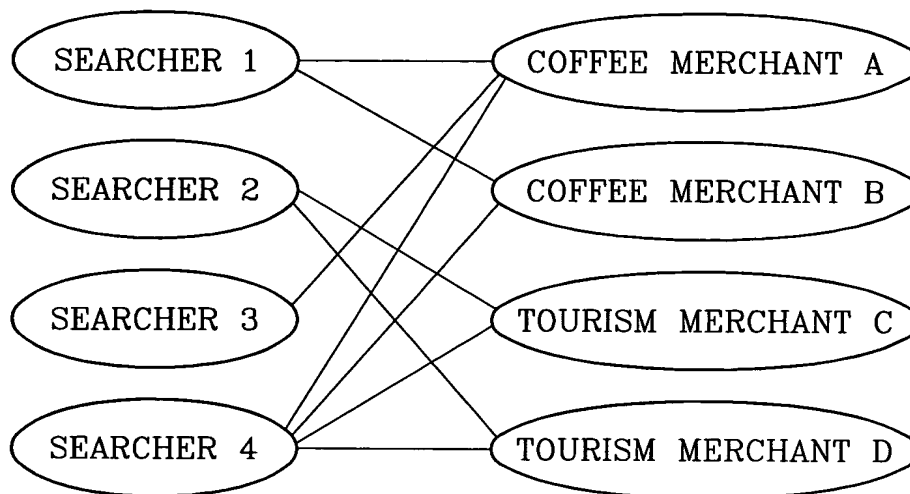


FIG. 13

	COFFEE MERCHANT A	COFFEE MERCHANT B	TOURISM MERCHANT C	TOURISM MERCHANT D
SEARCHER 1	1	1	0	0
SEARCHER 2	0	0	1	1
SEARCHER 3	1	0	0	0
SEARCHER 4	1	1	1	1

$A' =$

FIG. 14

9/9

$$S_1 = \begin{matrix} & \begin{matrix} \text{FIRST COFFEE} \\ \text{MERCHANT} \end{matrix} & \begin{matrix} \text{COMPUTER} \\ \text{PROGRAMMER} \end{matrix} & \begin{matrix} \text{SECOND COFFEE} \\ \text{MERCHANT} \end{matrix} \\ \begin{matrix} \text{FIRST COFFEE MERCHANT} \\ \text{COMPUTER PROGRAMMER} \\ \text{SECOND COFFEE MERCHANT} \end{matrix} & \begin{pmatrix} 1 & 0 & 1 \\ 0 & 0 & 0 \\ 1 & 0 & 1 \end{pmatrix} \end{matrix}$$

FIG. 15A

$$S_2 = \begin{matrix} & \begin{matrix} \text{FIRST COFFEE} \\ \text{MERCHANT} \end{matrix} & \begin{matrix} \text{COMPUTER} \\ \text{PROGRAMMER} \end{matrix} & \begin{matrix} \text{SECOND COFFEE} \\ \text{MERCHANT} \end{matrix} \\ \begin{matrix} \text{FIRST COFFEE MERCHANT} \\ \text{COMPUTER PROGRAMMER} \\ \text{SECOND COFFEE MERCHANT} \end{matrix} & \begin{pmatrix} 1 & 0 & 1 \\ 0 & 0 & 0 \\ 1 & 0 & 2 \end{pmatrix} \end{matrix}$$

FIG. 15B

$$S_n = \begin{matrix} & \begin{matrix} \text{FIRST COFFEE} \\ \text{MERCHANT} \end{matrix} & \begin{matrix} \text{COMPUTER} \\ \text{PROGRAMMER} \end{matrix} & \begin{matrix} \text{SECOND COFFEE} \\ \text{MERCHANT} \end{matrix} \\ \begin{matrix} \text{FIRST COFFEE MERCHANT} \\ \text{COMPUTER PROGRAMMER} \\ \text{SECOND COFFEE MERCHANT} \end{matrix} & \begin{pmatrix} 20 & 3 & 10 \\ 3 & 16 & 2 \\ 10 & 2 & 22 \end{pmatrix} \end{matrix}$$

FIG. 15C

$$C_{\text{java}} = \begin{matrix} & \begin{matrix} \text{FIRST COFFEE} \\ \text{MERCHANT} \end{matrix} & \begin{matrix} \text{COMPUTER} \\ \text{PROGRAMMER} \end{matrix} & \begin{matrix} \text{SECOND COFFEE} \\ \text{MERCHANT} \end{matrix} \\ \begin{matrix} \text{FIRST COFFEE MERCHANT} \\ \text{COMPUTER PROGRAMMER} \\ \text{SECOND COFFEE MERCHANT} \end{matrix} & \begin{pmatrix} 1 & -0.958187 & 0.788139 \\ -0.958187 & 1 & -0.931305 \\ 0.788139 & -0.931305 & 1 \end{pmatrix} \end{matrix}$$

FIG. 16